

	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L2	0	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (duplicat\$4 or mirror\$4) same (SCSI or interfac\$4)).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:14
2	BRS	L3	6	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (duplicat\$4 or mirror\$4) same (SCSI or interfac\$4)).ab.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:14
3	BRS	L4	0	("2005/0125616").URPN.	USPAT	2006/05/02 06:15
4	BRS	L1	76	(initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (duplicat\$4 or mirror\$4) same (SCSI or interfac\$4)	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 07:05

	Type	L #	Hits	Search Text	DBs	Time Stamp
5	BRS	L5	0	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same (SCSI or interfac\$4)).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:21
6	BRS	L6	4	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same (SCSI or interfac\$4)).ab.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:25
7	BRS	L7	31	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4)).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:26
8	BRS	L8	7	((initiat\$\$ or target\$4 or nexus) same (time or short\$4 or decreas\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same group\$4).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:30

	Type	L #	Hits	Search Text	DBs	Time Stamp
9	BRS	L9	31	((initiat\$\$ or target\$4 or nexus) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same group\$4).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:42
10	BRS	L10	1	((initiat\$\$ or target\$4 or nexus) same (leader) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same group\$4).clm.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:42
11	BRS	L11	1	((initiat\$\$ or target\$4 or nexus) same (leader) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same group\$4).ab.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:43
12	BRS	L12	1	((initiat\$\$ or target\$4 or nexus) same (messag\$4) same (arbitrat\$4 or select\$4 or choos\$4) same (mirror\$4) same group\$4).ab.	US- PGPUB ; USPAT; EPO; JPO; IBM_TD B	2006/05/02 06:46

	Type	L #	Hits	Search Text	DBs	Time Stamp
13	BRS	L13	1	"20050125616"	US- PGPUB ; USPAT;EPO; JPO; IBM_TD B	2006/05/02 06:47
14	BRS	L14	1	13 and (carrier or wave or signal or transmi\$5)	US- PGPUB ; USPAT;EPO; JPO; IBM_TD B	2006/05/02 07:01
15	BRS	L15	1	13 and (instruction\$2 or code or program)	US- PGPUB ; USPAT;EPO; JPO; IBM_TD B	2006/05/02 06:49
16	BRS	L16	2426	711/162	US- PGPUB ; USPAT;EPO; JPO; IBM_TD B	2006/05/02 07:05

	Type	L #	Hits	Search Text	DBs	Time Stamp
17	BRS	L17	1	1 and 16	US- PGPUB ; USPAT;EPO;JPO;IBM_TD B	2006/05/02 07:05

US-PAT-NO: **6665780**

DOCUMENT-IDENTIFIER: **US 6665780 B1**

TITLE: **N-way data mirroring systems and methods for using the same**

DATE-ISSUED: **December 16, 2003**

US-CL-CURRENT: **711/162, 711/112 , 711/156**

APPL-NO: **09/684807**

DATE FILED: **October 6, 2000**

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Claims Text - CLTX (12):

12. A method for N-way mirroring of data, comprising: selecting an initiator storage, the initiator storage having data that is to be protected; selecting a group of storage, each storage in the group of storage being configured to obtain an initial copy of the data of the initiator storage that is to be protected; detecting a modification occurrence in the data that is to be protected in the initiator storage; wherein when the modification is detected, the method includes: preventing further modifications to the initiator storage; ascertaining a number N, the number N being equal to a sum of each storage of the group of storage; decrementing the number N each time one of the storage in the group of storage is updated with the copy of the modification; enabling further modifications to the initiator storage once the number N is equal to zero, the number N being equal to zero being indicative of each of the storage of the group of storage having a consistent copy of the data of the initiator storage that is to be protected; and notifying each of

the storage of the group of storage of the modification occurrence, the notifying being performed without transmission of a modification corresponding

to the detected modification occurrence; wherein the notifying is configured

to cause each of the storage of the group of storage to independently obtain

the modification corresponding to the detected modification occurrence from the

initiator storage without assistance from the initiator storage so as to maintain data consistency between the initiator storage and the group of storage.

PGPUB-DOCUMENT-NUMBER: 20050015407

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050015407 A1

TITLE: **System and method of relational configuration mirroring**

PUBLICATION-DATE: January 20, 2005

US-CL-CURRENT: 707/200

APPL-NO: 10/622277

DATE FILED: July 17, 2003

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Summary of Invention Paragraph - BSTX (8):

[0006] U.S. Patent Application Publication No. US 2002/0103969 A1,
entitled

**"Mirroring Agent Accessible To Remote Host Computers, And Accessing
Remote**

**Data-Storage Devices, VIA A Communications Medium," discloses a
hardware-based**

**mirroring agent that provides a LUN based input/output (I/O) interfaced to
remote host computers including mirrored LUNs. The hardware-based
mirroring**

**agent is similar to a disk array, but manages and provides to host
computers an**

**interface to remote data storage devices. Available to the mirroring agent
are**

**the location, addresses, remote data storage devices and/or specifications
of**

**mirror relationships to set up and initialize through a configuration and
administration interface. The mirroring agent then provides a LUN-based
interface to the remote data storage devices via a communications**

medium to host computers. The host computer can remap remote devices accessible via the communications medium via an automated discovery process, during which updating of the volume manager tables or host I/O tables occur. The mirroring agent establishes and synchronizes groups of mirrored data storage devices using well-known disk mirroring techniques. However, the processes of setting up the hardware-based mirroring agent are error prone and time consuming. It is a manual process and not an automatic process. The mirroring agent requires human intelligence to select the source and target volumes of the mirroring.